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Relationship between self-efficacy beliefs and achievement motivation in student nurses☆

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ABSTRACT

Objective: To investigate general self-efficacy levels and to examine the relationship between self-efficacy and achievement motivation in student nurses in China.
Methods: A total of 716 student nurses were enrolled in this study from 7 hospitals in western China. Data were collected using three scales: General Data Scale, Self-Efficacy Scale (SES) and Achievement Motivation Scale (AMS). There were 566 valid questionnaires.
Results: The mean general self-efficacy scores of the student nurses were low. There was a significantly positive relationship between self-efficacy and achievement motivation ($r = 0.432$, $p = 0.000$).
Conclusions: Our findings suggested that self-efficacy was related to age and educational levels, rather than gender and place of residence. Nursing managers should take measures to develop the self-efficacy of student nurses; when self-efficacy is developed, the achievement motivation may then be improved. Achievement motivation may also be improved through the improvement of self-efficacy.

1. Introduction

When student nurses with different educational levels enter a new environment (hospital) that is significantly different from college, they may be confused by the new clinical setting and nursing practice. Yusuf reports that self-efficacy and achievement motivation plays a critical role in the practice of nursing and professional development.[1] Thus, it is important to understand the level of self-efficacy in student nurses. Most studies have investigated undergraduate or associated student nurses as their research objects.[2,3] However, few studies have examined diploma or master student nurses. The present study was designed to investigate the levels of self-efficacy and whether there is a difference between student nurses and different educational levels (Diploma (Dip), Associate degree (AD), Bachelor's (BS) degree and Master's degree) in China and to determine whether there is a positive relationship between self-efficacy and achievement motivation. If the hypothesis is true, then these findings may help nurse managers to take measures to develop student nurses' self-efficacy beliefs. Achievement motivation may thus be improved.

Self-efficacy theory was first proposed by Albert Bandura.[4] Self-efficacy is a belief in one's capability to organize and conduct the courses of action required to produce given results.[5] Bandura[5] and Zimmerman[6] had demonstrated that when students with higher self-efficacy confronted a task, they tended to make the maximal effort, to be insistent, study hard and select difficult tasks. Similarly, nurses who have a high self-efficacy belief would view obstacles as an opportunity rather than a threat. In addition, they always want to overcome difficult situations, rather than to avoid the situations.[7,8] In another study, someone was also found that individuals with a high achievement tendency preferred a moderately difficult task because these tasks can provide the best chance for success.[9]

Self-efficacy is related to successful performance; this can improve the individual's motive and confidence to provide nursing practice in a complex situation.[10,11] Although we cannot view self-efficacy as self-confidence, both of these qualities highlight the individual's belief in one's capability to complete a task. In the current health care setting, nurses face various types of demands. To handle these demands, the nurses must be confident.[12] This idea is supported by Johnson, who proposed that health care providers

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who have no confidence cannot take the needed actions for their patients.[13] Thus, the researchers identified confidence as a critical factor for success in the nursing practice.[14] Student nurses need sufficient confidence to learn and do clinical operations for which they are not skilled. Thus, the nursing educators have the responsibility to provide information and to support the student nurses to improve their confidence.[15] Self-efficacy is more significant when a student performs poorly or when they are short of the confidence, rather than a lack of knowledge.[16]

Motivation is defined as the power that drives a person to attain high levels of achievement and performance and to overcome obstacles to make a difference.[17] Motivation is essential for clinical practice. In particular, it has become more important for student nurses who confront various demands derived from their patients. The individual's motive is improved with an increase in self-efficacy.

The purpose of this research was to investigate the levels of self-efficacy and to determine whether there is a difference in student nurses with different educational levels (Dip, AD, BS degree, Master's degree) in China and to determine whether there is a positive relationship between self-efficacy and achievement motivation. Thus, we propose the following hypotheses: (1) the general self-efficacy score of student nurses is low; (2) There is a positive correlation between self-efficacy and achievement motivation scores; and (3) The higher the educational level of the student nurses, the higher the score for self-efficacy.

2. Materials and Methods

The study was performed in a descriptive manner. In total, 716 student nurses from seven hospitals in western China were randomly selected and invited to participate in the survey. Hospitals in different parts of western China were approached. The aim was to avoid both over- and under-representation of student nurses with different educational levels.

2.1. Data collection

Data collection was performed from June 2013 to April 2014. Due to their busy schedules, the survey was performed in the evening. Researchers explained the purpose of this study via verbal instructions. The participants were allowed 20 min to answer all of questions about the three scales. The investigator was present and answered questions about the procedure. In every hospital, the questionnaires were eventually collected by a student nurse who would transfer the feedback information back to the researchers. If the respondents could not complete the survey within 20 min, then they were asked to return their questionnaire by e-mail. Only 566 respondents were effective in completing and returning the question out of a total of 610 questionnaires.

2.2. Instruments

The General Data Scale was designed by the researchers and included the following variables: gender, age, educational level and place of residence.

Self-efficacy was assessed using the general self-efficacy scale (SES). SES first developed by Schwarzer and is a commonly used instrument worldwide. SES has been translated into 27 different languages.[18–20] The Chinese version of SES was first published in 2001. SES is a 10-item self-report scale, which is arranged in a 4-point Likert-type format. Items were summed, and the total score interval was from 10 to 40. Higher numbers demonstrate higher efficacy beliefs. The current scale (Cranach's alpha is 0.87) appears to be excellent.[21]

The Achievement Motivation Scale (AMS) is a 30-item self-evaluation scale that is used to measure the student nurse's achievement motivation in aspects of nursing practice. The AMS is a 4-point Likert-type format. There were equal items among the positive and negative content. A positive content indicates the motive to achieve success (MS), while a negative content indicates the motive to avoid failure (MF). The total AMS score is calculated by the sum of the scores of MS minus those of MF. Thus, the total score ranges from −45 to 45. High scores are associated with more achievement motivation. The current Chinese version was translated and revised by Renmin and Kunt. The revised scale (Cranach's alpha to MS and MF is 0.83, 0.84, respectively) appears to be good.[22]

2.3. Ethical considerations

Every student nurse enrolled in this study was informed regarding the purpose, and each nurse signed the written informed consent.

2.4. Data analysis

Data were analyzed using SPSS version 13.0. First, the demographics of the student nurses were expressed as the mean ± SD and percentages. Second, independent-T-tests were performed to compare the mean self-efficacy scores among different genders or places of residence. ANOVA was performed to test whether the four groups were comparable in terms of the self-efficacy score. Third, the person's correlations between all of the variables of the study were calculated.

3. Results

The participants' characteristics are presented in Table 1. A total of 566 student nurses in this study completed the questionnaires. Their mean age was 21.8 ± 2.3 years, which ranged from 16 years to 31 years. In addition, 91.2% of the participants were female. In most cases (68%), the participants were from rural areas. The proportion of associate nurses and bachelor degree nurses was 52.1% and 35.7%, respectively. This values was considerably higher than those obtained in secondary school nurses and master degree nurses (8.0% and 4.2%, respectively).

The mean scores, standard deviations and t-values or F-values of the four groups involved in this study on self-efficacy, different gender or place of residence are shown in Table 2. The self-efficacy scores of the male student nurses (27.3 ± 4.9) was higher than those of female student nurses (25.1 ± 4.7). In contrast, there was no significant difference in self-efficacy between student nurses from rural areas and the city ($P = 0.161$). We performed ANOVA to compare the self-efficacy among the four groups. There was a significant difference among the four groups when referring the self-efficacy score ($P = .000$). The SNK-q test was performed to compare the self-efficacy scores between every two variables. The mean self-efficacy scores were higher in nurses with a Bachelor degree

Table 1
Description of the general data of student nurses ($n = 566$).

Characteristics	Range	n	Percent (%)
Age	16–31	21.8 ± 2.3[a]	
Gender	Male/Female	50/516	8.8/91.2
Educational level	Diploma	62	8.0
	Associate degree	217	52.1
	Bachelor degree	247	35.7
	Master degree	40	4.2
Place of residence	rural/city	395/171	69.8/30.2

Note: [a]Data of age are expressed as the mean ± SD.

Table 2
Comparison of the variables ($n = 566$).

Self-efficacy scores					
Variable	n	Mean	SD	t/F	P
Gender					
Male	50	27.3	4.9	3.104	0.002
Female	516	25.1	4.7		
Place of residence					
Rural	395	25.1	4.7	−1.402	0.161
City	171	25.7	4.7		
Educational level					
Diploma	62	23.3	4.7	11.904	0.000
Associate's degree	217	25.5	4.4		
Bachelor's degree	247	26.5	4.7		
Master 's degree	40	25.3	4.7		

compared to those with an Associate's degree (26.5 ± 4.7 vs. 25.5 ± 4.4). However, there were no differences in the scores of self-efficacy among AD, BS and MS degree student nurses ($P > .05$).

The person's correlations among the variables enrolled in this study are shown in Table 3. We examined the relationships between self-efficacy, age, educational level and achievement motivation. There was a significant positive correlation between educational level and self-efficacy ($r = 0.204$; $p = 0.000$). The correlation between educational level and total scores on the AMS was significant ($r = 0.155$, $p = 0.000$), as were the associations between educational level and scores on the following AMS subscale: MS($r = 0.113$; $p = 0.007$) and MF($r = -0.103$; $p = 0.014$).

A significant relationship was found between scores on self-efficacy and overall scores on achievement motivation, MS and MF ($r = 0.432$; $p = 0.000$; $r = 0.459$; $p = 0.000$; $r = -0.147$; $p = 0.000$, respectively). The variable age had a positive relationship with self-efficacy ($r = 0.233$; $p = 0.000$).

4. Discussion

The results of this study support the hypothesis that there is a positive correlation between self-efficacy and achievement motivation ($r = 0.423$). This result is consistent with previous findings.[23–25] Similarly, a meta-analysis revealed that self-efficacy beliefs had a positive relationship with academic achievement ($r = 0.38$).[26]

Caprara[26] proposed that self-efficacy beliefs are important predictors for achievement motivation. Low self-efficacy may affect the dimension of achievement motivation in difficult situations.[25] The results of this investigation indicated that the mean scores were 25.3, which is lower in student nurses compared to the international level (29.46).[18] New settings may contribute to this phenomenon. Because student nurses are in the hospital and are confronted with an alien setting, this opinion is supported by Benner.[3,27] Thus, it is necessary for nurse managers to improve the self-efficacy of student nurses. Moreover, when the self-efficacy of student nurses is developed, their achievement motivation is also improved. According to Bandura,[5] there are four ways to affect one's level of self-efficacy: performance accomplishments, vicarious experiences, verbal persuasion and emotional and physiological arousal. Nurse managers can provide opportunities to enhance self-efficacy of staff nurses via this information.[7] For instance, student nurses can share successful experiences from excellent nurses. Self-efficacy is associated with successful performance. Another way to improve self-efficacy is verbal persuasion. Managers may use verbal persuasion to encourage student nurses who appear to be on the edge of grasping a new nursing operation skill.[7]

Table 3
Correlation of the study variables in subjects ($n = 566$).

Iterms	Educational level	Self-efficacy	MS	MF	AMS	Age
Educational level	_					
Self-efficacy	0.204**	_				
MS	0.113**	0.459**	_			
MF	−0.103*	−0.147**	0.026	_		
AMS	0.155**	0.432**	0.688**	−0.707**	_	
Age	0.836**	0.233**	0.080	−0.075	0.111**	_

Note: MS = motive to achieve success, MF = Motive to avoid failure.
Pearson Correlations are reported at the diagonal. *$p < .0.05$;
**$P < 0.01$.

However, this study does not support the hypothesis that student nurses with a higher educational level obtain higher scores of self-efficacy. As shown in Table 2, no significant differences were found between student nurses with education levels of AD, BS degree and master's degree with regard to the scores on self-efficacy. Moreover, there was also no discrepancy between the Dip and AD degree student nurses. With regard to the other variables, we expected that age, gender and place of residence would have a significantly positive correlation with self-efficacy. However, a negative relationship was observed between gender, place of residence and self-efficacy.

We found that the mean self-efficacy scores of male student nurses were higher than those of females. However, findings obtained by Ayotola were inconsistent with these observations. This author showed that there was no significant difference between males and females with regard to scores of self-efficacy.[28] Nilsson and Glossop suggested that the overall mean self-efficacy scores in female students was higher compared to male students.[29,30] Some potential reasons for our findings are that our sample size was sufficiently large and the participants included subjects with four different educational levels compared with other studies.[2,3,28] Another potential explanation for this consequence is that male student nurses have higher confidence up to the nursing practice and are accepted and supported by more people. Another explanation is that male student nurses may often be encouraged by nurse managers compared with females nurses. However, no statistically significant difference was found in terms of place of residence. This result was also consistent with findings obtained from previous studies.[3]

In this study, level of education was significantly correlated with self-efficacy. However, the evidence did not support that a higher educational level indicated higher scores on self-efficacy. Nurse managers can determine who will or will not need support according to the educational level and scores of self-efficacy in a specific environment. Kovner proposed that registered nurses with a higher educational level had a higher work motivation.[31] As previously described in Atkinson's theory, higher self-efficacy can contribute to stronger motivation.[32] Thus, nurse managers can strengthen the self-efficacy of student nurses such that they can improve their achievement motivation.

However, two limitations should be noted in this study. Although our sample size (566) is sufficiently large, the male student nurses accounted for only 8.8% of the total subjects due to a lower overall total number of male student nurses. Moreover, as previously described, many factors, such as the environment, can affect the scores of self-efficacy and achievement motivation. A portion of student nurses may over- or under-estimate their capability in one survey. Thus, our results should be verified by other studies.

5. Conclusions

This study showed that the overall mean scores of the student nurses were low, and there was a significant positive correlation

between self-efficacy and achievement motivation. Our findings also suggested that self-efficacy is related to age, educational level instead of gender, and place of residence. Nursing managers can take measures to develop the self-efficacy of student nurses depending on their educational levels. When the self-efficacy beliefs of student nurses are developed, then their achievement motivation is also improved. Thus, further studies should be performed to detect the factors influencing the self-efficacy of student nurses and subsequently take good measures to improve the self-efficacy.

Conflicts of interest

All the contributing authors declare no conflicts of interest.

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